

# Mountain Climber Connectedness to Nature and Sense of Well-Being: The Roles of Immersion and Inspiration

## 中文摘要

很少研究在戶外遊憩(outdoor recreation)背景下，同時探討遊客啟發(tourist inspiration)與沉浸(immersion)對遊憩體驗的影響。本研究目的在檢視自然連結(connectedness to nature)、沉浸、遊客啟發與幸福感(happiness)之間的關係，並探討沉浸與啟發的中介效果(mediating effect)。本研究針對攀登台灣高海拔登山路線的登山者進行調查，共回收 359 份有效問卷。結果顯示，自然連結對沉浸、遊客啟發與幸福感皆呈正相關；沉浸對幸福感與遊客啟發皆呈正相關；遊客啟發對幸福感亦呈正相關。此外，沉浸與遊客啟發在自然連結-幸福感之間皆扮演完全中介(complete mediation)的角色。且對比結果發現，遊客啟發對自然連結與幸福感之間的中介作用大於沉浸的作用。本研究拓展了啟發理論於休閒領域的應用，並討論研究結果的意涵與對未來研究之建議。

關鍵詞：啟發、自然連結、沉浸、幸福感、登山者

## Abstract

Few studies have explored the effects of tourist inspiration and immersion on recreational experiences in outdoor recreation. The purpose of this study was to investigate the associations among connectedness to nature, immersion, tourist inspiration, and sense of well-being and to explore the mediating effects of immersion and tourist inspiration. We surveyed mountain climbers who climbed high-altitude mountains in Taiwan and obtained 359 valid responses. The results revealed that connectedness to nature was positively correlated with immersion, tourist inspiration, and sense of well-being; that immersion was positively correlated with sense of well-being and tourist inspiration; and that tourist inspiration was positively correlated with sense of well-being. In addition, immersion and tourist inspiration had complete mediating roles in the association between connectedness to nature and sense of well-being. Furthermore, the mediating effects of tourist inspiration on the association between connectedness to nature and sense of well-being was greater than those of immersion. This study expanded the inspiration theory by applying it to the field of recreation, and discussed the implications of the research results and offered suggestions for future studies.

**Keywords** : inspiration, connectedness to nature, immersion, sense of well-being, climber

## **Introduction**

Nature-based exercises, recreation, and tourism activities provide numerous opportunities for developing the tourism industry and protecting the natural environment (Zarei et al., 2021). Mountains have critical natural resources, and are natural places that remain relatively undisturbed and in which urban individuals in post-industrial societies can learn about species and genetic diversity to satisfy their nature-based tourism needs. Mountain tourism is a critical form of tourism that can be used to improve the economic conditions of poor regions. The demand for this form of tourism has been growing. The physical activity, challenges, and risk of mountain climbing have led it to be considered an adventurous activity that involves risk factors and uncertainty (Beedie & Hudson, 2003; Musa et al., 2004). Nevertheless, the activity remains a popular adventure travel and recreational activity (Shafer & Scott, 2013). This is mainly because it enables mountain climbers to come into contact with and to connect with the natural environment and to gain sense of well-being from this interaction (Tsaour et al., 2013).

Mayer and Frantz (2004, p. 503) defined connectedness to nature as “individuals’ trait levels of feeling emotionally connected to the natural world.” Studies have demonstrated that nature-based recreation positively affects connectedness to nature and leisure satisfaction, and that these factors improve life satisfaction, sense of well-being, and quality of life (Cleary et al., 2020; Chick et al., 2015; Kuykendall et al., 2015; London et al., 1977). Mountain climbing was reported to induce physiological, psychological, and spiritual improvements in mountain climbers and thereby reinforced their sense of well-being (Tsaour et al., 2013). Howell et al. (2011) indicated that individuals who are closely connected to nature derive a meaningful existence from this closeness with nature, which strengthens their sense of well-being. Therefore, in this study, we proposed that connectedness to nature would improve mountain climbers’ sense of well-being.

Studies have demonstrated that participating in adventure challenges enables participants to completely immerse themselves in the activities, experience harmony with the environment, and feel a state of deep concentration and a sense of control (Jackson & Csikszentmihalyi, 1999; Pomfret, 2012). Connectedness to nature involves an individual’s affective connection to and sense of belongingness with nature (Mayer & Frantz, 2004). Individuals who gain a sense of belonging with nature better enjoy the environment or feel energized by it and become more engaged with it (Bowles & Scull, 2019). Therefore, in this study, we proposed that connectedness to nature could increase mountain climber immersion. Warber et al. (2015) stated that nature immersion experiences lead to relaxation, reduced stress, improved emotions, and spiritual well-being. Tsaour et al. (2013) discovered that when mountain climbers achieve a balance between their skills and challenges, they become focused on the experiences and accept challenges. This engagement leads to sense of well-being. Therefore, in this study, we proposed that when mountain climbers became immersed in activities, their sense of well-being would increase. In addition, we proposed that connectedness to nature would generate sense of well-being through immersion. Other studies have yet to investigate whether immersion mediates the association between connectedness to nature and sense of well-being.

Tsaur et al. (2022) defined tourist inspiration as a temporary motivational state generated by the inducement of a travel destination leading to an intrinsic pursuit of a travel-related goal. Martin (2004) discovered that the connection between individuals and nature is determined by emotional resonance. When individuals feel a connection, they experience more emotions. A study demonstrated that when individuals made connections with objects, they linked these connections to their own stories and experiences, causing these objects to evoke inspiration experiences (Latham et al., 2019). In this study, we proposed that connectedness to nature would positively affect mountain climber inspiration. No study has yet explored the inspiration state of mountain climbers in an outdoor recreational setting or the association between this state and such settings.

Studies have revealed that inspiration positively affects emotional outcomes (Böttger et al., 2017; Thrash et al., 2014). Khoi et al. (2021) demonstrated that inspiration generates the positive emotion of delight in tourists. Other research revealed that sense of well-being involves a hedonistic perspective (Waterman, 1993). Lopes et al. (2016) stated that hedonism involves an individual's positive emotional experience in a given moment. Therefore, in this study, we proposed that when mountain climbers were inspired, they would experience positive emotions, which would lead them to experience a sense of well-being. That is, inspiration would have a mediating effect on the association between connectedness to nature and sense of well-being. The associations among these variables have not been clarified in the literature.

In this study, mountain climbers were included as participants, and we investigated the associations among connectedness to nature, immersion, tourist inspiration, and sense of well-being. Furthermore, we explored the mediating roles of immersion and tourist inspiration. The results of this study offer several contributions to this field of study. First, research has rarely explored how travelers' connectedness to nature affects their experience of an activity as they participate in it. The model of this study expands upon academic understandings of connectedness to nature and its consequences. Second, no research has explored the association between tourist inspiration and its causal variables in outdoor recreation. This empirical study verified the role of inspiration in mountain climbing tours. Third, although several studies have shown the effects of connectedness to nature on sense of well-being, they have not investigated the mediating effects of immersion and tourist inspiration on the association between connectedness to nature and sense of well-being. This study bridges these research gaps. The results of this study may be used to offer suggestions for recreational managers on management practices.

## **2. Conceptual framework and Hypotheses**

The structural framework of this study is presented in Figure 1. We proposed the following hypothesis:

Hypothesis 1: Connectedness to nature is positively associated with sense of well-being.

Hypothesis 2: Connectedness to nature is positively associated with immersion.

Hypothesis 3: Connectedness to nature is positively associated with tourist inspiration.

Hypothesis 4: Immersion is positively associated with sense of well-being.

Hypothesis 5: Immersion is positively associated with tourist inspiration.

Hypothesis 6: Tourist inspiration is positively associated with sense of well-being.

Hypothesis 7-1: Immersion has a mediating effect on the association between connectedness to nature and sense of well-being.

Hypothesis 7-2: Immersion has a mediating effect on the association between connectedness to nature and tourist inspiration.

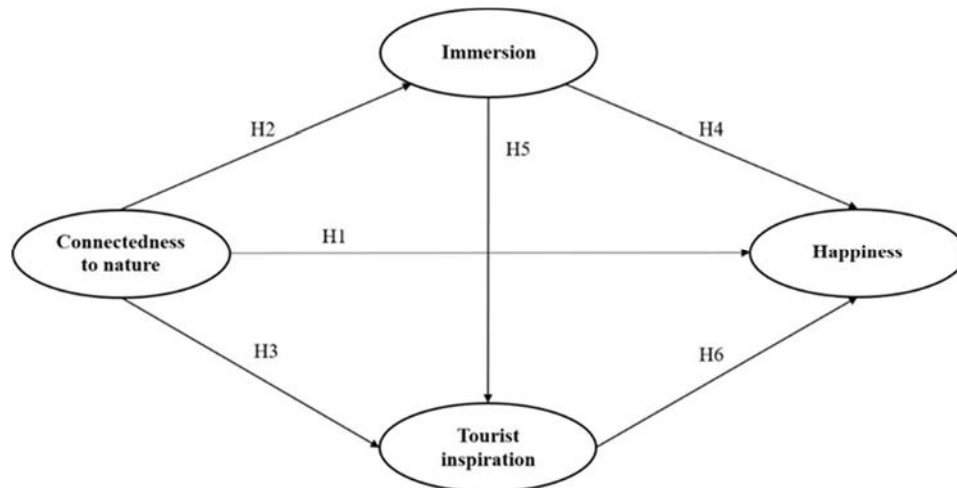


Figure 1. Research framework

### 3. Methods

#### 3.1 Sample and Data Collection

A study showed that having high-altitude mountaineering experience is an indicator of an accurate understanding of the environment (Ewert, 1994). Tsauro et al. (2013) reported that high-level mountain climbing experiences lead to different transcendent experiences and psychological flow and can improve the mind, body, and soul. Therefore, we surveyed individuals who had gone mountain climbing on high-altitude (at least 3000 m) mountains. The recruited individuals had gone mountain climbing on at least one of five representative high-altitude mountains in Taiwan, namely Jade Mountain, Xue Mountain, Tapachien Mountain, Mount Qilai South Peak, and Mount Hehuan. In the questionnaire, we asked participants to consider a mountain climbing trail they had completed in the past 6 months that had inspired them in responding to the survey. To assist participants in clearly recalling their inspirational experiences, at the beginning of the questionnaire, we included various open-ended questions intended to guide the mountain climbers through recollection of their mountain climbing experience. For example, we asked the participants about the trail they had climbed, the duration of the mountain climbing, and their experiences during the mountain climbing. We further asked the participants to briefly describe the inspirational experiences they had at this location.

Before we completed data collection, we conducted a pilot survey to ensure that the questionnaire was clear, reliable, and comprehensive. The pilot survey involved 30 tourists who met the recruitment criteria of the study. We used the results of the pilot survey to modify the descriptions of some items to improve their applicability to the situation and to adjust the questionnaire format. The official survey was conducted between March and May 2022. Because of the COVID-19 pandemic, outdoor activities were strictly regulated and constrained. Furthermore, because the pandemic situation occasionally changed, the number of people who went mountain climbing during this period could not be accurately predicted. Therefore, to collect data on the five included mountains, we distributed a link to the online questionnaire through online communities, such as well-known mountain climbing websites in Taiwan, Facebook mountain climbing groups, and the discussion boards of mountain climbing associations (e.g., <http://www.keepon.com.tw/>; <https://www.backpackers.com.tw/>; [bbs://ptt.cc](https://www.ptt.cc/)). To encourage participation, we offered raffle gift certificates for participants who provided valid responses.

### **3.2 Measurement**

A structured questionnaire was used as a research instrument, and all scale items were measured on a 5-point Likert scale. The Connectedness to Nature Questionnaire (14 items) established by Mayer and Frantz (2004) was used to assess connectedness to nature. To improve the questionnaire's applicability to the target situation, we modified the descriptions of some items (e.g., changing "I feel as though I belong to the Earth as equally as it belongs to me" to "When I was climbing, I felt as though I belonged to the Earth as equally as it belonged to me"). The hedonic enjoyment dimension (6 items) of the Personal Expressive Activities Questionnaire developed by Waterman (1993) was used to measure sense of well-being. Three items established by Lunardo and Ponsignon (2020) were used to measure immersion. The 15-item Tourist Inspiration Questionnaire developed by Tsaour et al. (2022) was used to assess tourist inspiration. The questionnaire also included demographic data-related items, such as sex, age, education level, marital status, occupation, personal monthly income, and mountain climbing experience. The questionnaire was first composed in English and then translated into Chinese. The translation was completed by the researchers of this study and two native English speakers with mountain climbing experience. In accordance with the suggestions of Van de Vijver and Hambleton (1996), to reduce the bias of the translation, we completed reverse translation before finalizing the questionnaire design.

## **4. Analysis and results**

### **4.1 Sample Characteristics**

Individuals who had climbed Jade Mountain, Xue Mountain, Tapachien Mountain, Mount Qilai South Peak, or Mount Hehuan were included.

We retrieved 419 questionnaires. Among them, 60 were invalid and were removed. The number of valid samples was 359, posting a valid response rate of 85.7%. The tourist location distribution was as follows: Jade Mountain (25.3%), Xue Mountain (21.7%), Tapachien Mountain (13.1%), Mount

Qilai South Peak (16.4%), and Mount Hehuan (23.4%). Most of the participants were men (61.8%). The largest age group was the 18–29 years group (44.3%), followed by the 30–39 years group (34.5%). Most participants were single (79.1%) and had graduated from a university or college (68.5%). Most worked in industry or commerce (27.6%). The second largest group was students (13.6%). The features of the sample in the present study were similar to those of past studies on outdoor adventurous recreation (Tsaur et al., 2020; Su et al., 2021).

#### 4.2 Measurement Properties

We verified the measurement model by using SPSS 21.0 and AMOS 20.0 software. To improve the reliability of the scale and identify items with high measurement quality, the components of the scale were analyzed using corrected item–total correlation. This step was completed with reference to Churchill’s (1979) specification that items with a corrected item–total correlation value of lower than 0.3 should be deleted. Three items related to connectedness to nature had values below the standard and were deleted (i.e., “I often feel disconnected from nature,” “When I think of my place on Earth, I consider myself to be a top member of a hierarchy that exists in nature,” and “My personal welfare is independent of the welfare of the natural world.”). All other items had values above the standard value and were retained. Subsequently, skewness–kurtosis tests were employed to test normality assumptions. Kline (2005) reported that variables with a skew index of over 3 and a kurtosis index of larger than 10 violate the normal distribution assumption. The study items were assessed by determining the range of skewness (–1.17 to –0.27) and kurtosis (–0.85 to 1.22). The data did not violate the assumption of normality.

Confirmatory factor analysis was performed, and the goodness-of-fit parameters were as follows:  $\chi^2 = 1026.86$ ,  $df = 550$ ,  $\chi^2/df = 1.87$ ,  $GFI = 0.86$ ,  $AGFI = 0.84$ ,  $RMSEA = 0.05$ ,  $IFI = 0.94$ ,  $CFI = 0.94$ , and  $SRMR = 0.05$ . Most of the fit values were within the ideal range (Hair et al., 2014). Although the  $GFI$  and  $AGFI$  values were less than 0.90, the value for the most important index,  $\chi^2/df$  was less than 3.00, and the  $CFI$  value was larger than 0.90. This indicated the measure had acceptable reliability, and we tentatively concluded that the measurement model was acceptable. As indicated in Table 1, the composite reliability of all constructs ranged between 0.86 and 0.92, which is higher than 0.6 (Fornell & Larcker, 1981), indicating that the constructs had favorable reliability. The average variance extracted of each construct ranged between 0.51 and 0.69, which is higher than 0.5 (Jöreskog & Sörbom, 1989), indicating that the constructs had favorable convergent validity.

Table 2 presents the results of the correlation analysis. Diagonal values are the square roots of AVE. The square root of the AVE for each construct should be greater than the correlations between each construct (Fornell & Larcker, 1981). The scales met the heterotrait–monotrait (HTMT) ratio criterion, which measures the ratio of the average of the heterotrait–heteromethod correlations to the average of the monotrait–heteromethod correlations (Henseler et al., 2015). As presented in Table 2, all interfactor correlations were below the threshold value of 0.85 (Kline, 2005), which indicated that the measurement model exhibited favorable discriminant validity.

Table 1 Confirmatory factor analysis

Constructs and items	Factor loading	CR	AVE	Cronbach's $\alpha$
<b>Connectedness to nature</b>		0.92	0.52	0.92
I felt a sense of oneness with the natural world around me.	0.74			
I thought about the natural world as a community to which I belonged.	0.68			
I recognized and appreciated the intelligence of the living organisms here.	0.68			
While climbing the mountain, I imagined myself to be part of a larger cyclical process of living.	0.68			
I felt a kinship with animals and plants here.	0.73			
While climbing the mountain, I felt as though I belong to the Earth as equally as it belonged to me.	0.72			
While climbing the mountain, I had a deep understanding of how my actions affected the natural world.	0.69			
While climbing the mountain, I felt part of the web of life.	0.81			
While climbing the mountain, I felt that all inhabitants of Earth, human, and nonhuman, shared a common 'life force'.	0.75			
Like a tree can be part of a forest, I felt embedded within the broader natural world.	0.76			
While climbing the mountain, I felt like I am only a small part of the natural world around me, and that I am no more important than the grass on the ground or the birds in the trees.	0.65			
<b>Immersion</b>		0.87	0.70	0.87
While climbing the mountain, I was able to block out most other distractions.	0.77			
While climbing the mountain, I was absorbed in what I am doing.	0.91			
While climbing the mountain, my attention did not get diverted very easily.	0.82			
<b>Tourist inspiration</b>				
<i>Inspired-by</i>		0.91	0.57	0.91
This climb stimulated my imagination	0.71			
This climb made me discover something new	0.78			
This climb unexpectedly gave me a new idea	0.80			
This climb stimulated my curiosity	0.79			
This climb stimulated my inspiration	0.78			
This climb struck a chord with me	0.75			
This climb had broadened my horizon	0.66			
This climb inspired me	0.75			
<i>Inspired-to</i>		0.91	0.60	0.91
This climb made me want to experience more	0.71			
This climb made me want to make some changes	0.79			
This climb made me want to understand more	0.83			
This climb made me want to do something	0.79			
This climb made me want to change myself	0.75			
This climb made me learn the value of appreciation	0.79			
This climb made me reflect	0.77			
<b>Happiness</b>		0.91	0.62	0.90
This activity gave me my greatest pleasure.	0.79			
This activity gave me my strongest sense of enjoyment.	0.79			
I felt more satisfied than I do when engaged in most other activities.	0.83			
When I engaged in this activity, I felt good.	0.80			
When I engaged in this activity, I felt a warm glow.	0.70			
I felt happier than I do when engaged in most other activities.	0.79			

Table 2 Correlations of all constructs.

Construct	1	2	3	4	5
1. Connectedness to nature	<b>0.72</b>	0.46	0.59	0.59	0.61
2. Immersion	0.41**	<b>0.84</b>	0.36	0.40	0.47
3. Inspired-by	0.55**	0.32**	<b>0.75</b>	0.74	0.60
4. Inspired-to	0.54**	0.35**	0.67**	<b>0.77</b>	0.66
5. Happiness	0.57**	0.41**	0.55**	0.60**	<b>0.79</b>

Note: Diagonal values (in bold) represent the square roots of AVEs.

Above-diagonal elements are the heterotrait–monotrait (HTMT) ratio; below-diagonal elements are correlations between the constructs for Fornell–Larcker Criterion.

\*\*  $p < 0.01$

### 4.3 Path Model Assessment

Structural equation modeling was adopted to test the research hypotheses. The goodness-of-fit indices ( $\chi^2 = 36349$ ,  $df = 203$ ,  $\chi^2/df = 1.79$ ,  $GFI = 0.92$ ,  $AGFI = 0.90$ ,  $RMSEA = 0.05$ ,  $NFI = 0.92$ ,  $IFI = 0.97$ ,  $CFI = 0.97$ , and  $SRMR = 0.043$ ) exceeded the standards (Hair et al., 2014), indicating that this measurement model fit the data well. The hypothetical paths were determined, and the results are presented in Figure 2. The coefficients were significant for the paths between connectedness to nature and sense of well-being ( $\beta = 0.15$ ,  $t = 2.08$ ,  $p < .05$ ), connectedness to nature and immersion ( $\beta = 0.47$ ,  $t = 7.71$ ,  $p < .001$ ), and connectedness to nature and tourist inspiration ( $\beta = 0.60$ ,  $t = 8.82$ ,  $p < .001$ ). Furthermore, immersion had a significant association with sense of well-being ( $\beta = 0.16$ ,  $t = 2.90$ ,  $p < .01$ ) and tourist inspiration ( $\beta = 0.18$ ,  $t = 3.09$ ,  $p < .01$ ). Tourist inspiration was significantly associated with sense of well-being ( $\beta = 0.55$ ,  $t = 6.69$ ,  $p < .001$ ). The results of the analyses support H1–H6.

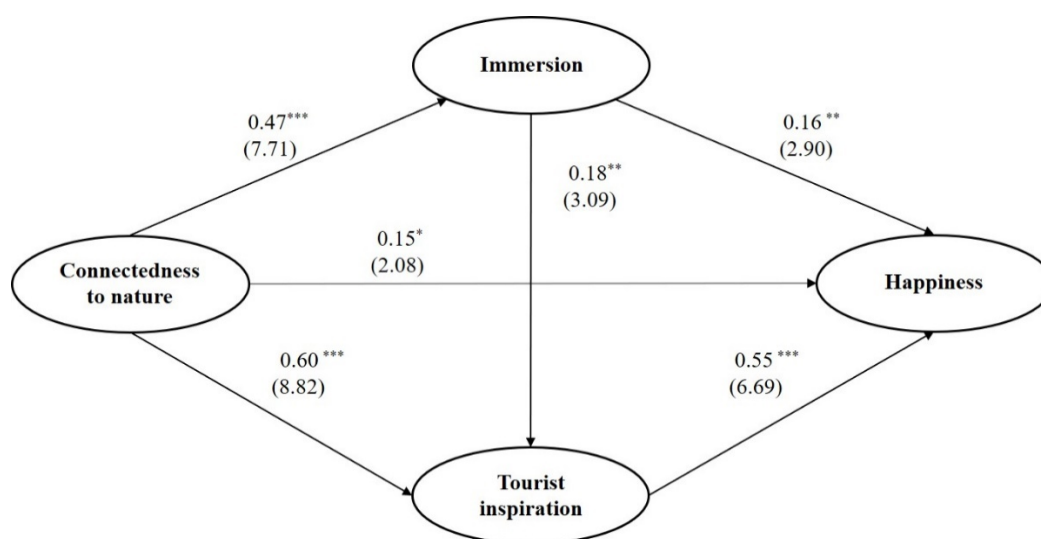


Figure 2. Research structural model.

#### 4.4 Mediation Effect Assessment

Research suggested that the bootstrapping method should be used to test the significance of a mediator (Taylor et al., 2008). Therefore, we used the bootstrap self-sampling method. In the original data (N = 359), the samples were randomly analyzed 2000 times, and the error correction confidence interval was set to 95%. Table 3 lists the mediation effect results. Connectedness to nature had an indirect effect on sense of well-being through immersion (95% CI [0.021, 0.133]) and tourist inspiration (95% CI [0.194, 0.526]). Because no zero values were included in any of the CIs, the indirect effect was significant. The direct effect of connectedness to nature on sense of well-being was nonsignificant (95% CI [-0.078, 0.311]), indicating complete mediation and supporting H7-1 and H7-2.

The mediating effect predicted in H8-1 and H8-2 was analyzed. The results revealed that connectedness to nature had an indirect effect on tourist inspiration through immersion (95% CI [0.032, 0.143]). Immersion also had an indirect effect on sense of well-being through tourist inspiration (95% CI [0.037, 0.188]). Because no zero values were included in the CIs, the indirect effect was significant. Moreover, the direct effect of connectedness to nature on tourist inspiration (95% CI [0.552, 0.796]) and that of immersion on sense of well-being (95% CI [0.147, 0.365]) were significant. Therefore, partial mediation occurred, which supported H8-1 and H8-2.

Table 3 Regression coefficients of mediation models.

Path	Estimate on	Bootstrapping 2000 times		<i>p</i> value
		Percentile 95% CI		
		Lower	Upper	
<b>Indirect effect</b>				
H7-1 Connectedness to nature→Immersion→Happiness	0.073	0.021	0.133	0.004
H7-2 Connectedness to nature→Tourist inspiration→Happiness	0.330	0.194	0.526	0.001
H8-1 Connectedness to nature→Immersion→Tourist inspiration	0.084	0.032	0.143	0.002
H8-2 Immersion→Tourist inspiration→Happiness	0.099	0.037	0.188	0.002
<b>Direct effect</b>				
Connectedness to nature→Happiness	0.146	-0.078	0.311	0.182
Connectedness to nature→Tourist inspiration	0.600	0.451	0.735	0.001
Immersion→Happiness	0.157	0.05	0.261	0.004
<b>Total effect</b>				
Connectedness to nature→Happiness	0.596	0.508	0.678	0.001
Connectedness to nature→Tourist inspiration	0.685	0.552	0.796	0.001
Immersion→Happiness	0.256	0.147	0.365	0.001

## Discussion

The results of this study revealed that connectedness to nature positively influenced sense of well-being, immersion, and tourist inspiration. Studies have indicated that people who are connected to nature are more satisfied with life, feel happier, and have more positive affect (Mayer & Frantz, 2004; Tam, 2013; Zhang et al., 2014). The results of this study showed that when the mountain climbers felt a connection to nature, they gained a sense of belonging through this emotional connection. When the mountain climbers' desire for a sense of belonging was satisfied, it increased their sense of well-being. Therefore, connectedness to nature can encourage sense of well-being. In addition, when the mountain climbers experienced connectedness to nature, they gained a sense of belonging and identification with their surrounding environment. When the mountain climbers felt a strong sense of belonging or identification, they became more focused and involved in their current activity or environment. Therefore, connectedness to nature promoted immersion. Another study remarked that developing a connection with a target stimulates inspiration (Latham et al., 2019). When the mountain climbers of this study established emotional connections with the surrounding natural environment, they experienced emotional resonance or began thinking about cherishing or protecting the natural environment. Therefore, connectedness to nature promoted tourist inspiration.

The results of this study indicated that immersion positively influenced sense of well-being and tourist inspiration. According to other studies, immersion in nature reduces stress and increases positive emotions (Mayer et al., 2009; Frost et al., 2022). The results of this study showed that the mountain climbers focusing on their current environment increased their positive emotions, which increased their sense of well-being. Therefore, immersion increased their sense of well-being. Thrash and Elliot (2004) reported that fascination with something and the ability to concentrate on that thing promotes inspiration. When the mountain climbers of this study focused on their environment or activity, they were more likely to pay attention to their surroundings, which led them to become inspired. Therefore, immersion promoted tourist inspiration. Our results also revealed that tourist inspiration positively affected sense of well-being. When the mountain climbers were inspired, they experienced more positive emotions, such as sense of well-being and transcendence, which further increased their sense of well-being. Inspiration can lead individuals to wish to pursue goals. Therefore, when the mountain climbers set a goal, the mountain climbing activity had greater purpose and meaning to them, which improved their sense of well-being. Therefore, tourist inspiration can promote sense of well-being.

The results of this study also verified that immersion and tourist inspiration play complete mediating roles in the association between connectedness to nature and sense of well-being. This indicates that immersion or tourist inspiration must occur for sense of well-being to be increased by connectedness to nature. The mediating effects of tourist inspiration (0.33) were greater than those of immersion (0.073). Khoi et al. (2020) reported that inspiration involves evocation of physiological pleasure from the process of experiencing. Immersion enables individuals to reach a state of relaxation (Carù & Cova, 2005; Frochot et al., 2017). Therefore, in this study, we proposed that tourist inspiration

would elicit positive emotional reactions, and that immersion was more likely to calm emotions. Lim (2016) suggested that high arousal positive emotional states can be considered a form of sense of well-being. This may explain why in the association between connectedness to nature and sense of well-being, the mediating effects of tourist inspiration were greater than those of immersion.

In this study, we further verified that immersion played a partial mediating role in the association between connectedness to nature and tourist inspiration. According to the analytical results, the direct effects of connectedness to nature and tourist inspiration on sense of well-being (0.60) were greater than the indirect effects of immersion on these associations (0.084). This indicates that immersion may not be required for connectedness to nature to evoke tourist inspiration. Latham et al. (2019) reported that the commonality of triggered inspiration can establish connections between people. Therefore, in this study, we proposed that building connections with the surrounding natural environment could lead mountain climbers to feel inspired. Moreover, we proposed that tourist inspiration had a mediating role in the association between immersion and sense of well-being. Analysis revealed no significant difference between the direct effect of immersion on sense of well-being (0.157) and the indirect effects of tourist inspiration on this association (0.099). Therefore, immersion increased the mountain climbers' sense of well-being without mediation from tourist inspiration.

### **Theoretical Implications**

In this study, we employed a causal model of tourist inspiration, with mountain climbers included as participants. We also analyzed the mediating effects of immersion and inspiration. The results may offer critical contributions to the development of recreational psychology and behavior theories. First, this study demonstrated that mountain climbers with a close connection to nature have increased sense of well-being. This result was in line with those of other studies (Howell et al., 2011; Zhang et al., 2014). Howell et al. (2011) reported that individuals with a connection to nature can derive a sense of meaning in their existence from their relationship with nature, which increases their sense of well-being. This study demonstrated that in a mountain climbing environment, the relationship between a connection to nature and a sense of meaning is more intense. Second, this study revealed that when mountain climbers feel a connection to nature, they develop a sense of belonging to or identification with their surrounding environment, which increases their level of immersion. This was similar to the finding of Bowles and Scull (2019), who reported that when individuals gain a sense of belonging, they can enjoy their environment and become involved in it. However, no studies have verified the association between connectedness to nature and immersion. Therefore, in this study, we explored the association between these variables. Moreover, we verified that immersion positively affects sense of well-being. When the mountain climbers were focused on the activity they were participating in, they enjoyed the activity, increasing their positive emotions. This result was similar to that of Tsaour et al. (2013), who indicated that when mountain climbers become highly involved or immersed in their current activity, their sense of well-being increases. Therefore, the results of this study are in line with those of others.

Inspiration has mostly been empirically researched in the fields of social psychology and marketing; it has rarely been investigated in leisure and recreation. Latham et al. (2019) included museum tourists as participants and stated that when individuals develop connections with target objects, they become inspired. The results of this study were similar to those of Latham et al. (2019) in that we discovered that connectedness with nature could effectively evoke inspiration. When mountain climbers feel an emotional connection to nature, their sense of belonging to nature inspires them and causes them to cherish the environment, to reflect, and to wish to act to protect the environment. Therefore, this study expanded on research on connectedness to nature and inspiration. The results of this study indicated that immersion positively affects tourist inspiration. Other studies have reported that when individuals focus on a certain object, they are more likely to be inspired (Thrash & Elliot, 2004; Latham et al., 2019). This study demonstrated that immersion and tourist inspiration have a causal association.

The results of this study also showed that tourist inspiration positively affects sense of well-being; when the mountain climbers were inspired, their positive emotions increased, and therefore, their sense of well-being increased. Tsaur et al. (2022) discovered that when tourists are inspired by their destination, their positive feelings toward the destination increase, which increases their sense of well-being. Therefore, the results of this study expanded on their findings. This study further indicated that immersion and tourist inspiration simultaneously play the role of complete mediators in the association between connectedness to nature and sense of well-being. This signifies that for the mountain climbers, connectedness to nature may not lead to sense of well-being unless this connectedness leads to immersion or inspiration. The mediating effect of tourist inspiration was more pronounced than that of immersion. The mediating effects of immersion and tourist inspiration have rarely been investigated in the literature. Therefore, the results of this study can contribute to the leisure psychology literature.

### **Practical Implications**

The results of this research have several practical implications. The positive influence of connectedness to nature on the outcomes of this study led us to identify strategies for recreation activity managers and recreationists. First, we suggest that mountain climbing trail managers reduce the number of man-made facilities or features on the trail and retain the original local features. This would enable mountain climbers to experience nature in its true form and thereby increase their connectedness to nature. Second, the busyness of urban life and the effects of the COVID-19 pandemic have led people to participate in fewer outdoor activities. In addition, the number of individuals developing mental health problems, such as stress, anxiety, or depression, increased during the COVID-19 pandemic (Mrklas et al., 2020). Numerous countries have loosened pandemic-related restrictions. Therefore, we suggest that recreationists participate in mountain climbing to increase their interactions with nature. The natural environment can enable them to release stress and increase their positive, which can promote sense of well-being.

To lead mountain climbers to become more involved in mountain climbing, industry managers

are suggested to use immersive designs, such as multisensory stimulation environments, to develop environments that enable people to feel as if they are actually in nature. This would increase mountain climbers' sense of immersion. We suggest that industry practitioners establish interactive scenic trails. Practitioners could establish tower viewers along the trails that enable mountain climbers to explore the surrounding natural environment from different perspectives. At resting spots, such as gazebos or rest stops, practitioners could develop soundscapes by playing natural sounds (such as the sound of water, birds, or trees) to increase immersion. We also suggest that industry practitioners launch immersive interactive applications. In these applications, they can integrate environmental information, such as history, culture, and natural ecology, with augmented reality and thereby increase the fun of the mountain climbing by creating interactive tours. These applications could also include spaces in which users can share their thoughts and photos from their mountain climbing. These social interactions would reinforce their engagement in mountain climbing activities. For mountain climbers, we suggest that they select mountain climbing trails that are suitable for their abilities and interests. When recreational activities are suitable for the individual's abilities and needs, they can enjoy the process of the activity and focus more on it.

A study reported that interpretation can increase inspiration (Gilson, 2018). Therefore, we suggest that mountain climbing associations or travel industry practitioners increase their guidance and explanations when on package tours. These services can deepen mountain climbers' understanding of the mountains and reinforce their connection with their surroundings, increasing their inspiration. In addition, Kwon and Boger (2021) reported that attractive sensory experiences or unique service behaviors can lead to inspiration. Thus, managers should design creative landscapes, such as unique mountain climbing trails, and visually appealing scenery facilities to lead mountain climbers to feel inspired.

### **Limitations and Future Research**

This study had several limitations. First, we recruited only mountain climbers who climbed mountains that were least 3000 m tall, and the participants were mostly Taiwanese. Therefore, the results may not be applicable to all recreational activities. We suggest that future studies recruit different recreationists or collect samples from other countries to increase the generalizability of our theoretical and empirical results. Second, we did not investigate the effects of activity experience on the causal association identified in this study. Subsequent studies may explore whether experience has an effect. Third, we used only connectedness to nature and immersion as antecedents and only sense of well-being as a consequence. We suggest that future scholars explore other contingent factors, such as the effects of serious leisure on inspiration, to expand research on inspiration in the field of recreation.

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